Title: Measurement Matters

Brief Overview:

This three day unit allows students to explore with the standard and metric units of measurement. Students should begin this unit with some understanding of how to use a ruler to measure (how to hold the ruler, how to read to the ruler to the nearest inch/centimeter). On the first two days students will brainstorm items that can be measured, what units of measurement would be appropriate to use when measuring different objects, and practice measuring real-life objects. On Day 3 students will use the measurements they have been making and convert the units between inches, feet, and yards and centimeters and meters.

NCTM Content Standard:

Students will:

- recognize the attributes of length;
- understand how to measure using nonstandard and standard units;
- select an appropriate unit and tool for the attribute being measured.

Grade/Level:

2

Duration/Length:

3 days with an assessment on day 4

Student Outcomes:

- Students will be able to recognize the attributes of length.
- Students will be able to measure using nonstandard and standard units.
- Students will be able to select an appropriate tool for the attribute being measured.

Materials and Resources:

Day 1

- *Pre-Assessment*
- Chart paper
- *Standard Vocabulary Picture Cards*
- *Standard Pinch Card*
- *Measurement Concept Map*
- *Standard Scavenger Hunt*
- *Re-Teach Flip Book*
    - 12 inch construction paper (re-teach-2 pieces for each student)

    - Scissors (re-teach)
    - Tape (re-teach)
    - Crayons (re-teach-two colors for each student)
- *Standard Measurement Sort*

Day 2

- Chart paper
- *Metric Vocabulary Picture Cards*
- *Metric Pinch Card*
- *Measurement Concept Map*
- *Metric Scavenger Hunt*
- Meter Stick for each student (use the Paper Meter Stick listed next if needed)
- *Paper Meter Stick* http://www.vendian.org/mncharity/dir3/paper_rulers/
    - Scissors (re-teach)
    - Tape (re-teach)
    - Crayons (re-teach-two light colors for each student)
- *Re-Teach Flip Book* (made previous day)
- *Sorting Measurements* (re-teach)
- *Listing and Sorting Measurements*(enrich)
- *Metric Measurement Sort*

Day 3

- *Sorting and Ordering Measurements* (smallest to largest)
- 12 in by 1 in strip of construction paper per student
- 12 different colored crayons per group of 3-4
- *Re-teach Flip Book*
- *Measurement Exchange*

Day 4

- *Post-Assessment*

Suggested Additional Resources

- *Inch by Inch* by Leo Lionni ISBN #0-688-13283-9
- *How Big is a Foot* by Rolf Myller ISBN#0-440-40495-9
- *Inchworm and a Half* by Elinor J. Pinczes ISBN#978-0-395-82849-6
- *Math Counts Length* by Henry Pluckrose ISBN#0-516-45453-6
- Have maps available to look at miles and kilometers.
- *Standard vs. Metric Pinch Cards*

Development/Procedures:

Day 1

Pre-assessment

- Students will work independently to complete the *pre-assessment*. On the *pre-assessment*, students will be asked to measure pictures and lines to the nearest inch or centimeter. Then they will be asked questions about converting measurements. The assessment ends with a BCR question which allows students to answer measurement questions using reasoning. An answer key is provided.

Engagement

- Ask the students to work together in groups of 3-4 to brainstorm a list of objects that can be measured. Students will make a list at their seats on paper or whiteboards while you add the objects to the chart paper. Keep this list for later activities.
- Introduce the students to the vocabulary for the standard measurements: inches, feet, yards, and miles using *Standard Vocabulary Picture Cards*.
- Ask the students to think about references that would represent each measurement. *Examples that students may come up with: an inch is about two finger widths, a foot is a little longer than a new pencil or about a text book, a yard is about the students arm span, and miles are way to measure long distances such as the distance you drive in a car.*
- Ask them which measurements they are would be able to show using their bodies and which they would not be able to show (A mile cannot be shown with the body because it's too large.).
- Ask the students to stand up and get ready to show the size of measurements using their bodies. *Ex: inch-two fingers side by side, foot-the length from the wrist to the elbow, and yard-stretching your wingspan.*
    - *Show me an inch using a part of your body.*
    - *Show me a foot using a part of your body.*
    - *Show me a yard using a part of your body.*
      Practice this several times, in various orders, asking the questions faster each time.
    - *Show me which measurement you would use to measure a pencil.*
    - *Show me which measurement you would use to measure a table.*
    - *Show me which measurement you would use to measure a doorway.*
    - *Show me which measurement you would use to measure a football field.*
- Allow the students to use the body reference and object references to make reasonable guesses as to the length of objects that they brainstormed. Have the students list their estimates next to each object.

Exploration

- Ask the students a variety of questions and have the students determine various ways to sort the units of measuring distance using thumbs up/thumbs down.
  Thumbs up or thumbs down:
    - *I would measure a book using yards.*
    - *I would measure a football field using yards.*

- *I would measure a pencil using miles.*
- *I would measure a pencil using inches.*
- *I would measure a road trip (driving in a car) using miles.*
- *I would measure a doorway in feet.*

- Ask the students a variety of questions and have the students use the *Standard Pinch Card* with inches, feet, yards, and miles to show the answers.
- Choose students to explain their thinking after each question.
    - *What unit would you use to measure a crayon?*
    - *What unit would you use to measure a table?*
    - *What unit would you use to measure a floor?*
    - *What unit would you use to measure the height of a wall?*
    - *What unit would you use to measure the distance between two cities?*

Explanation

- Explain that we are learning to measure in a variety of ways and ask the students if they can name the two systems of measurement, standard and metric. Have the students write the two systems on the *Measurement Concept Map.*
- Tell the students that on Day 1 they are only working on the standard system, inches, feet, yards, and miles.
- Discuss that this is the system that is primarily used in the United States. Explain that not many objects are measured in yards.
    - Ask the students, *"What can you think of that might be measured in yards?"*
    - Relate yards to student interests such as a football field and show the picture card of a football field broken into yards.
- Return to the list of objects that can be measured and ask the students:
    - *Could this list of items be placed in categories?*
    - *What ways could we categorize these objects?*
    - *Why would we measure some of the objects in inches? In feet? In yards? In miles?*
- Place the objects in the list on the *Measurement Concept Map*. Be sure that students have at least one object in each column.
- Review that miles are used to measure long distances like the distance between cities or states.
- Model measuring a few objects to the nearest inch, foot, and yard using a ruler and yard stick.
    - A sticky note (in)
    - A text book (ft)
    - A table (yard)
- Have groups of 3-4 students practice measuring these three objects in stations around the room to practice seeing the inch, foot, and yard measurements on the ruler or yard stick.

Extension

- Give the students the *Standard Scavenger Hunt* where the students will find objects around the room, tell what unit they would use to measure the object, and measure to find the actual size.
- Have students share answers with the class and record the answers on the whiteboard.
- Show Brain Pop Jr. "Inches and Feet" http://www.brainpopjr.com/math/measurement/ .
- Show Fun Brain http://www.funbrain.com/funbrain/measure/index.html .

Differentiation

- Reteach
  - Give the students a 12 inch piece of construction paper. Holding it in the landscape orientation, fold the top 1/3 of the way down the paper. The bottom section would represent the foot. Have the students use a ruler to mark each inch on the top section of the paper then have the students use two crayons to color each inch a different color. Example of *Reteach Flip Book* is in the resources.
  - Give the students a second 12 inch piece of construction paper. Hold it in the landscape orientation and fold it in thirds. Have the students cut the strips apart and tape them together end to end to create a yard stick.
  - Show The Ruler Game which can be found on the following website: http://www.globalclassroom.org/rulergame200/index.html
    Use whole inch option.
  - Show Apples 4 the Teacher http://www.apples4theteacher.com/measure.html
  - Show Fun Brain http://www.funbrain.com/funbrain/measure/index.html

- Enrich
  - Have the students work in groups of two to use objects that they can find around the room to create a new object that equals an inch, a foot, and a yard. *Ex: Students may put three pencils together end to end to make about a yard or 6 erasers to make about a foot.*
  - Show Fun Brain http://www.funbrain.com/funbrain/measure/index.html (have the students choose the more difficult options)
  - Show Gamequarium http://www.gamequarium.com/measurement.html

Evaluation

- Have the students complete the resource, *Standard Measurement Sort*

Day 2

Engagement

- Ask the students to remember the system of measurement and units of measurement that were discussed the previous day and jot them down on a piece of paper (save for later activities).

- Ask the students if they remember what the other system of measurement is called and if they can name the units of measurement in that system.
- Introduce the students to the vocabulary for the standard measurements: centimeters, meters, and kilometers using *Metric Vocabulary Cards*.
- Ask the students to think about references that would represent each measurement. *Examples that students may come up with: a centimeter is about the width of a thumb nail, a stretched arm span measures about a meter, and a kilometer measures long distances such as the distance that people run.*
- Ask them which measurements they would be able to show and which they would not be able to show. A kilometer cannot be shown with the body because it's too large.
- Ask the students to stand up and get ready to show the size of measurements using their bodies. *Ex: centimeter-width of thumb, and meter-stretching your wingspan as far as you can.*
    - *Show me a centimeter using a part of your body.*
    - *Show me a meter using a part of your body.*
      Practice this several times, in various orders, asking the questions faster each time.
    - *Show me which measurement you would use to measure the height of a person.*
    - *Show me which measurement you would use to measure a pencil.*
    - *Show me which measurement you would use to measure an eraser.*
    - *Show me which measurement you would use to measure the length of a room.*
- Allow the students to use the body reference and object references to make reasonable guesses as to the length of objects that they remembered from the previous day. Have the students list their estimates next to each object.

Exploration

- Ask the students a variety of questions and have the students determine various ways to sort the units of measuring distance using thumbs up/thumbs down.

    Thumbs up or thumbs down:
    - *I would measure a book using kilometers.*
    - *I would measure a book using centimeters.*
    - *I would measure a pencil using meters.*
    - *I would measure a pencil using centimeters.*
    - *I would measure a road trip (driving in a car) using kilometers.*
    - *I would measure a doorway in kilometers.*
    - *I would measure a doorway in meters.*

- Ask the students a variety of questions and have the students use the *Metric Pinch Card* with centimeter, meters, and kilometers to show the answers.
- Choose students to explain their thinking after each question.
    - *What unit would you use to measure a crayon?*

- *What unit would you use to measure a table?*
- *What unit would you use to measure a floor?*
- *What unit would you use to measure the height of a wall?*
- *What unit would you use to measure the distance between two cities?*

Explanation

- Ask the students to turn to a partner and tell them what two systems of measurement they are learning. Have a student or two share.
- Explain that a centimeter is like an inch but smaller and part of the metric system.
- Ask the students the following questions using the *Metric Pinch Cards*.
    - *When we use inches in the standard system, other countries use _____ in the metric system?*
    - *When meters are used in the metric systems, we would use _____ in the standard system?*
    - *When other countries measure in kilometers, we measure in _____?*
- Tell the students that today they are only working on the metric system, centimeter, meters, and kilometers.
- Relate the root "cent" to a century being 100 years, 100 cents in a dollar, and 100 centimeters in a meter.
- Discuss that this is the system that is not used very often in the United States and that it is primarily used in other countries around the world.
- Return to the list of objects that can be measured and ask the students:
    - *Could this list of items be placed in categories based on the metric system?*
    - *What ways could we categorize these objects?*
    - *Why would we measure some of the objects in centimeters? In meters? In kilometers?*
- Place the objects in the list on the *Measurement Concept Map* from Day 1. Be sure that students have at least one object in each column.
- Review that kilometers are used to measure long distances like the distance that you would run in a race or drive in a car.
- Model measuring a few objects to the nearest centimeter, and meter using a centimeter/meter stick.
    - A thumb nail(cm)
    - The height of a desk (m)
- Have groups of 3-4 students practice measuring these objects in stations around the room to practice seeing the centimeter and meter measurements on the meter stick.

Extension

- Give the students a meter stick and the *Metric Scavenger Hunt* where the students will find objects around the room, tell what unit they would use to measure the object, and measure to find the actual size.

- Have student share answers with the class and record the answers on the whiteboard.
- Show Brain Pop Jr. "Centimeters, Meters, Kilometers" http://www.brainpopjr.com/math/measurement/
- Show Fun Brain http://www.funbrain.com/funbrain/measure/index.html

Differentiation

- Reteach
  - Give the students copy of the paper meter stick from the link. Have them cut each section of the meter stick out and tape them together in the correct order.
  - Give each student two light colored crayons and have them color each centimeter on the meter stick a different color to see to size of the centimeter compared to the size of the entire meter.
  - Have the students use the meter stick, flip book, and yard stick to complete the *Sorting Measurements* handout.
  - Show IXL http://www.ixl.com/math/grade-2/which-metric-unit-of-length-is-appropriate
  - Show Fun Brain http://www.funbrain.com/funbrain/measure/index.html
  - Show Gamequarium http://www.gamequarium.com/measurement.html

- Enrich
  - Distribute copies of *Listing and Sorting Measurements* to the students.
  - Have the students work in groups of 2 to use objects that they can find around the room to create a new object that equals a centimeter and then a meter. *Ex: Students may place three text books end to end to make about a meter or put two small paperclips next to each other to make about a centimeter.*
  - Show Fun Brain http://www.funbrain.com/funbrain/measure/index.html (have the students choose the more difficult options)
  - Show IXL http://www.ixl.com/math/grade-2/which-metric-unit-of-length-is-appropriate
  - Show Quia http://www.quia.com/rr/96635.html

Evaluation

- Use resource, *Metric Measurement Sort,* to assess student understanding.

Day 3

Engagement

- Use the *Sorting and Ordering Measurements* resource and ask students to remember all of the words that relate to distance and sort the words into Standard and Metric in order from smallest to largest.
- Ask students which standard measurements have a close match on in the metric system. *Ex: an inch is close to a centimeter, a yard is close to a meter, and a mile is close to a kilometer.*

Exploration

- Give students a 12 in strip of construction paper and ask them to line their ruler up right next to it and mark every inch on the construction paper.
- Have the students color each section a different color, when the students are finished ask the following questions.
    - *How many different colors did you use?*
    - *What does each color represent?*
    - *If you put all of the colors together what unit of measurement does that represent?*
    - *How many inches are in a foot?*

- Put the students in groups of 3 and ask the students if they can figure out how to make a yard? *Put 3 strips together.*
    - *What does each strip represent?*
    - *How many feet are in a yard?*
- Give each group of 3 a meter stick.
- Ask the students to determine how many centimeters make up the meter.
    - Ask each group to share the number of centimeters that make a meter and how they determined that number.

Explanation

- Ask the students to think about some things they might measure in feet and inches such as height.
- Stand a few students in front of the board and measure their height in inches, mark the student height on the board using a line. List the student's name and height in inches next to the line.
    - Many students know how tall they are in feet and inches, so ask student if they know how to change/convert inches to feet.
- Review the activities that have been created the previous two days comparing inches to feet, feet to yards, and centimeters to meters.
- Create a chart with the students on chart paper having the students help.
  12 inches= 1 foot , 24 inches=2 feet and so on until you reach 72 inches=6 feet
  Then 3 feet = 1 yard = 36 inches, 2 yards= 6 feet= 72 inches.
- Have students work in groups of 3-4 to practice measuring each other and record heights on the *Standard Conversions* handout in inches. They are not making conversion yet.
- Bring the students back together and show examples of using measuring tapes or meter sticks by measuring things around the room.
- Have the students measure objects from the classroom at stations in centimeters and meters and record the measurements on the *Metric Conversions* handout.
- Bring the students together and ask if we could make a chart using centimeters and meters that would be similar to inches, feet, and yards.
- Create a chart with the students on chart paper having the students help.

100centimeters=1 meter, 200centimeters=2 meters and so on to 500cm = 5 meters.

Extension

- Have the students complete the conversions on the *Standard Conversions* resource using the heights of students in inches and converting them to feet using the class chart to assist them.
- Have the students complete the conversions on the *Metric Conversions* that they obtained in the stations to convert centimeters to meters using the classroom chart to assist them.

Differentiation

- Reteach
  - Use the *Re-teach flip book* and colored paper meter stick from the previous day that were created on Day 1 and Day 2 to practice measuring objects in inches, feet, and yards then centimeters and meters. Make a list of the measurements on whiteboards or paper.
  - Use the *Re-teach flip book* and colored paper meter stick to assist the students in practicing making basic conversions from the list of measurements that were previously created on whiteboards or paper. *Ex. A book is 12 inches so a book is 1 foot. A table is 3 feet so a table is 1 yard.*

- Enrich
  - Have the students measure each other in feet and inches, 4 ft 5 in. and convert the measurements to inches.

Evaluation

- Have students complete the resource, *Measurement Exchange.* An answer key is provided.

Day 4

Summative Assessment:

- Students will complete the *post-assessment* which similarly models the *pre-assessment*. On the *post-assessment*, students will be asked to measure pictures and lines to the nearest inch or centimeter. Then they will be asked questions about converting measurements. The assessment ends with a BCR question which allows students to answer a measurement questions using reasoning. Students will show that they have gained an understanding of the measurement material presented in this unit by demonstrating a proficient score (80% or above) on the assessment. An answer key is provided.

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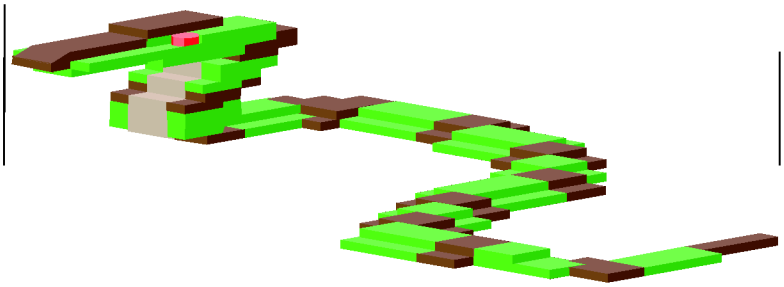
Pre-assessment

Name: _____

1. Use your inch ruler to measure the butterfly.

__inches

2. Use your inch ruler to measure the snake to the nearest inch.

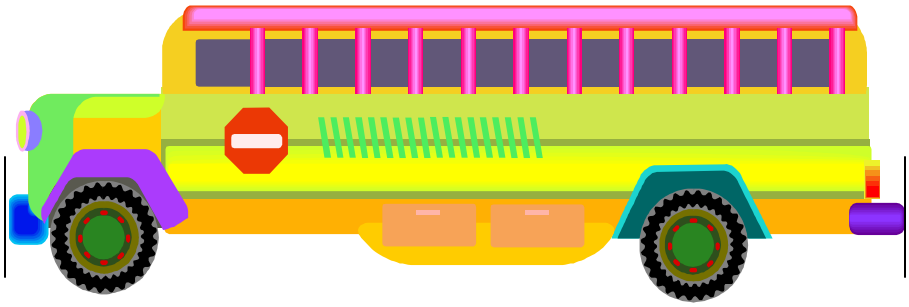


__ inches

3. Use your inch ruler to measure the line to the nearest inch.

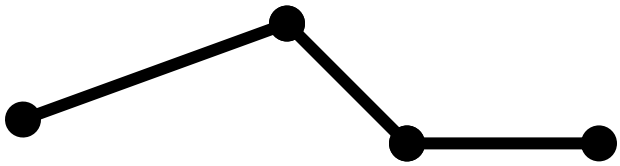
__inches

4. Use your centimeter ruler to measure the bus.



__ centimeters

5. Use your centimeter ruler to measure the path.



__ centimeters

6. Use your centimeter ruler to measure the line.

___ centimeters

Convert the following measurements.

7. 14 inches= _____feet_____inches
8. 39 inches=_____yard_____inches
9. 105 centimeters= _____meter_____centimeters

10.

Step A

A desk is 36 inches in length.

What is the length of the desk in feet?_____

What is the length of the desk in yards?_____

Step B

Explain how you found your answer. Use what you know about converting standard measurements in your explanation. Use words and/or numbers in your explanation.

Answer Key

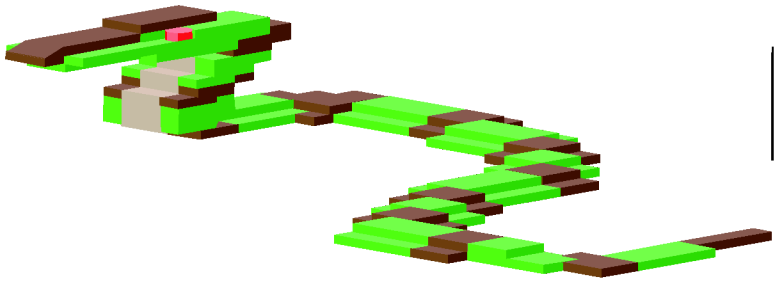
Pre-assessment

Name: _____

1. Use your inch ruler to measure the butterfly.

3 inches

2. Use your inch ruler to measure the snake to the nearest inch.

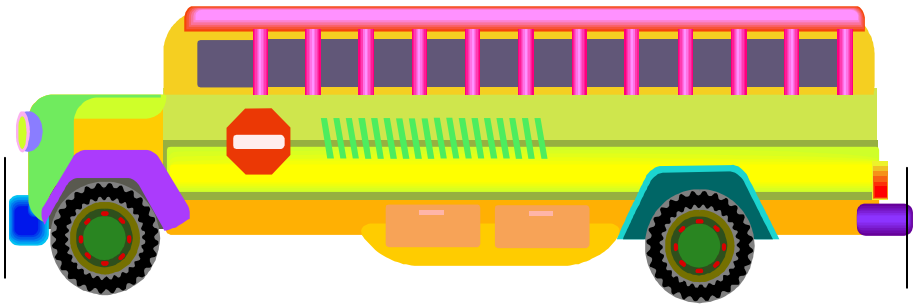


4 inches

3. Use your inch ruler to measure the line to the nearest inch.

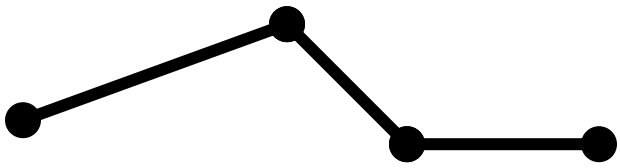
4 inches

4. Use your centimeter ruler to measure the bus.



12 centimeters

5. Use your centimeter ruler to measure the path.



9 centimeters

6. Use your centimeter ruler to measure the line.

10 centimeters

Convert the following measurements.

7. 14 inches= 1 foot and 2 inches
8. 39 inches= 1 yard and 3 inches
9. 105 centimeters= 1 meter and 5 centimeters

10.

Step A

A desk is 36 inches in length.

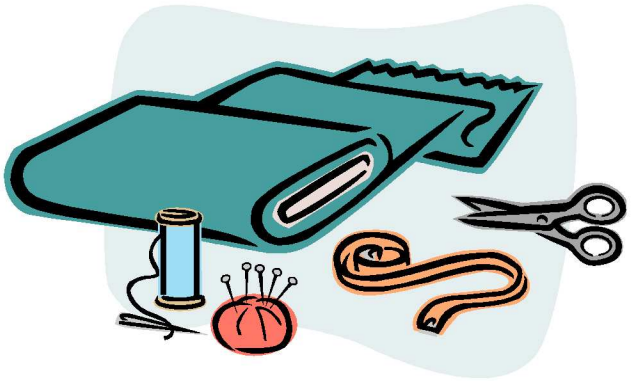
What is the length of the desk in feet?_____3 feet_____

What is the length of the desk in yards?_____1 yard_____

Step B

Explain how you found your answer. Use what you know about converting standard measurements in your explanation. Use words and/or numbers in your explanation.

Standard Vocabulary Cards

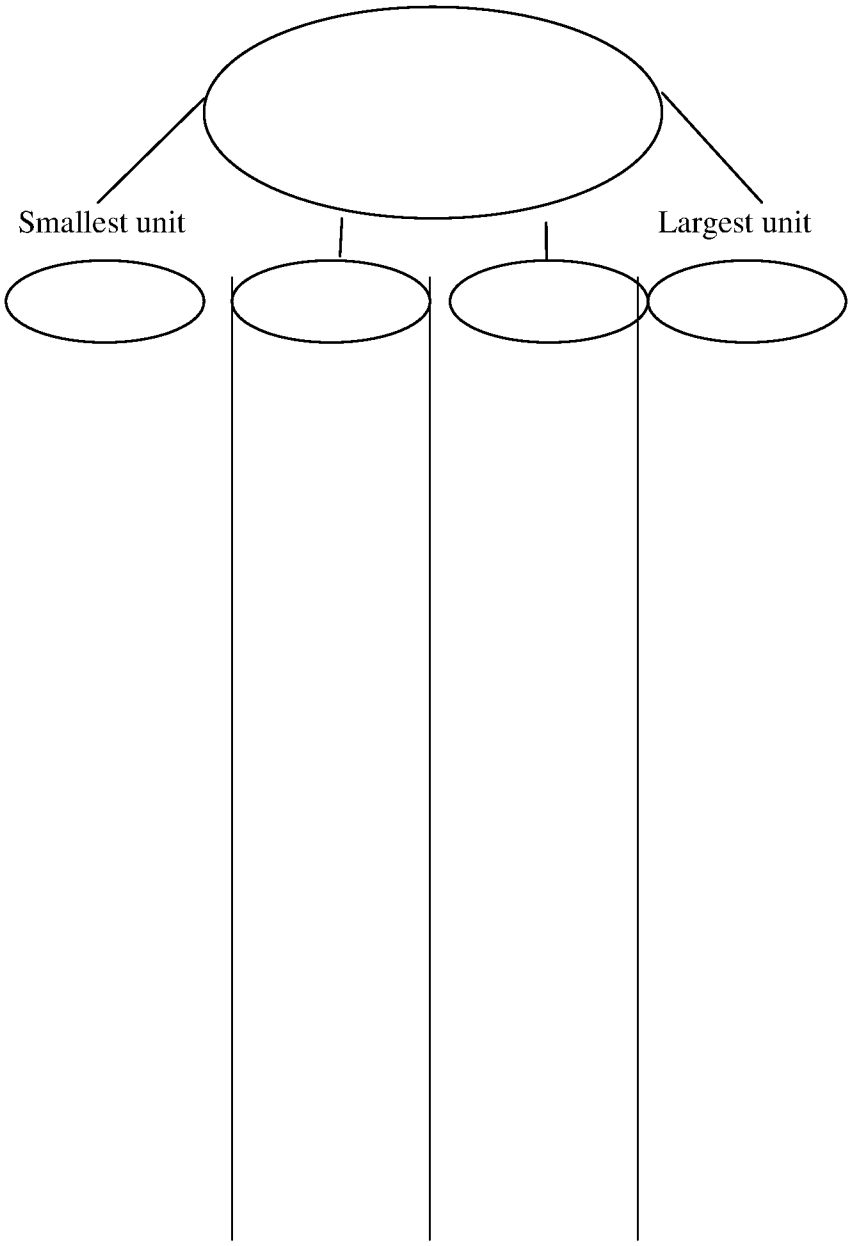
 **yards**	 **foot**
 **mile**	 **inch**

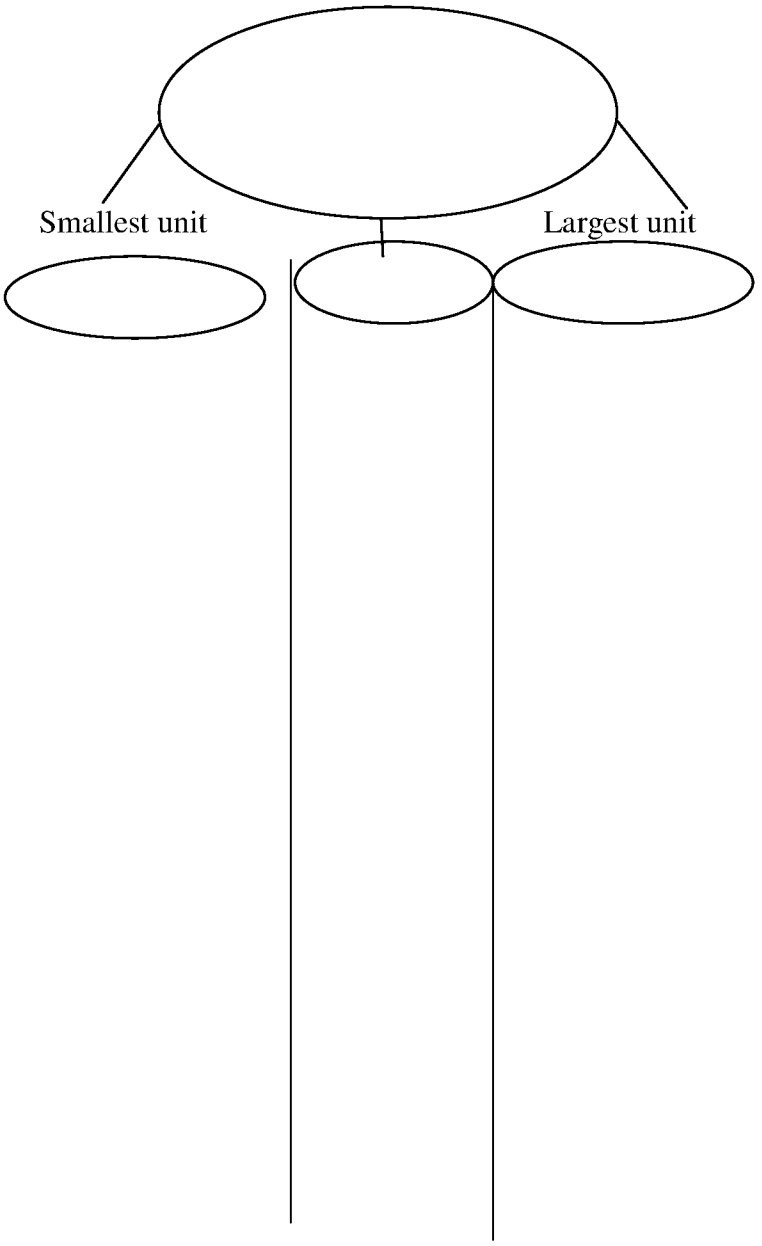
Standard Pinch Cards

Fold

inches	**inches**
feet	**feet**
yards	**yards**
miles	**miles**

Measurement Concept Map





Standard Scavenger Hunt

Directions: Look around the room to find objects that can be measured. Decide which measurement unit you will be using and then measure the object.

Object	Measurement unit	Estimate	Actual
Ex. Math book	inches	10inches	9 inches
1.			
2.			
3.			
4.			
5.			

Flipbook Example

Name:_____

Standard Measurement Sort

Directions: Sort the following objects into the correct unit of measurement. Hint: Some objects may fit into more than one category.

Word Bank			
Pencil	Book	Length of fabric on a tablecloth	Length of desk
Height of door	Length of classroom	Distance from home to school	eraser
Height of a mug	Distance flown from Texas to Florida	Baltimore to Washington, DC	crayon

Inches	Feet	Yards	Miles

Answer Key: Name:_____

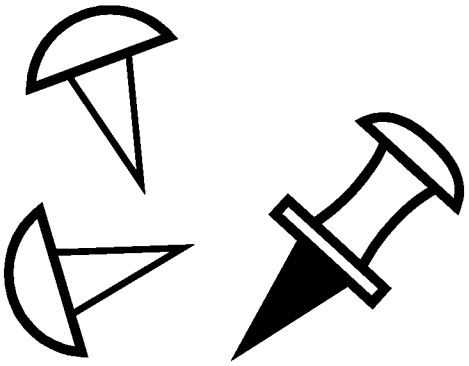
Standard Measurement Sort

Directions: Sort the following objects into the correct unit of measurement. Hint: Some objects may fit into more than one category.

Word Bank			
Pencil	book	Length of fabric on a tablecloth	Length of desk
Height of door	Length of classroom	Distance from home to school	eraser
Height of a mug	Distance flown from Texas to Florida	Baltimore to Washington, DC	crayon

Inches	Feet	Yards	Miles
pencil	Height of door	Height of door	Distance flown from Texas to Florida
eraser	Length of classroom	Length of classroom	Distance from home to school
Height of a mug	Length of fabric on a tablecloth	Length of fabric on a tablecloth	Baltimore to Washington, DC
book	Length of desk		

Metric Vocabulary Cards



centimeters

meters

kilometers

(height of thumbnail)

centimeters

Metric Pinch Cards

Fold

centimeters	centimeters
meters	meters
kilometers	kilometers

Metric Scavenger Hunt

Directions: Look around the room to find objects that can be measured. Decide which measurement unit you will be using and then measure the object.

Object	Measurement unit	Estimate	Actual
Ex. Name tag	centimeters	20cm	22 cm
1.			
2.			
3.			
4.			
5.			

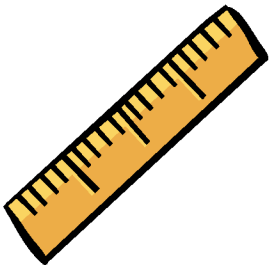
Sorting Measurements

Directions: Cut out the units of measurement and sort the units into the correct system of measurement.

Standard	Metric

centimeters	kilometers
miles	yards
inches	meters
feet	

Listing and Sorting Measurement



Directions: List all of the words you can think of that relate to measuring distance. Sort the words at the bottom of the page.

_____ _____

_____ _____

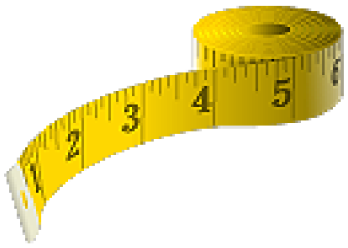
_____ _____

_____ _____

Standard	Metric

Name:_____

Metric Measurement Sort



Directions: Sort the following objects into the correct unit of measurement.

Word Bank			
Pencil	Book	Length of fabric on a tablecloth	Length of desk
Height of door	Length of classroom	Distance from home to school	eraser
Height of a mug	Distance flown from Texas to Florida	Baltimore to Washington, DC	crayon

Centimeters	Meters	Kilometers

Answer Key
Name:_____

Metric Measurement Sort

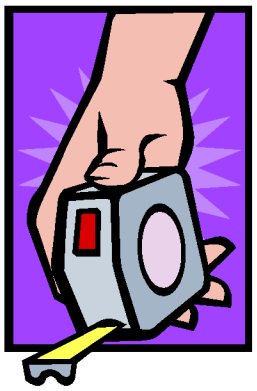
Directions: Sort the following objects into the correct unit of measurement.

Word Bank			
Pencil	Book	Length of fabric on a tablecloth	Length of desk
Height of door	Length of classroom	Distance from home to school	eraser
Height of a mug	Distance flown from Texas to Florida	Baltimore to Washington, DC	crayon

Centimeters	Meters	Kilometers
Pencil	Height of door	Distance flown from Texas to Florida
Height of a mug	Length of classroom	Distance from home to school
Book	Length of fabric on a tablecloth	Baltimore to Washington, DC
Length of desk		
eraser		
crayon		

Sorting and Ordering Measurement

Name:_____



Directions: Place the units of measurement in the word bank in order from units of measurement that measure smallest to largest.

Word bank	
miles	inches
centimeters	kilometers
yards	meters
feet	

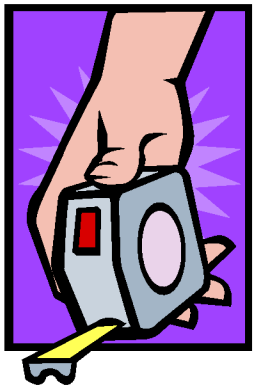
List the units of measurement in order of smallest to largest. Make sure your smallest measurements are listed at the top and the largest at the bottom.

Standard	**Metric**

Sorting and Ordering Measurement

Answer Key

Name:_____



Directions: Place the units of measurement in the word bank in order from units of measurement that measure smallest to largest.

Word bank	
miles	inches
centimeters	kilometers
yards	meters
feet	

Standard	Metric
inch	centimeters
feet	meters
yards	kilometers
miles	

Standard Conversions

Directions: First, only measure your partner's height in inches. Later on you will convert the inches to feet.

Student Name	Height in inches	Conversion to feet	Conversion to yards
Ex. Jane Smith	48 inches	4 feet	1 yard and 1 foot

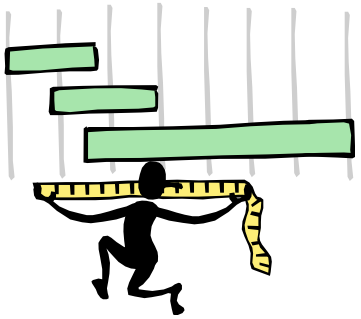
Metric Conversions

Directions: First, only measure your partner's height in centimeters. Later on you will convert the centimeters to meters.

Student Name	Height in centimeters	Conversion to meters
EX: Alex Smith	100 centimeters	1 meter

Name: _____

Measurement Exchange



Helpful Hint:

12 inches= 1 foot
3 feet= 1 yard
100 Centimeters= 1 meter

1. 13 inches = _____ foot/feet and _____ inch(es)

2. 26 inches = _____foot/feet and _____ inches

3. 3 feet and 5 inches = _____ yard (s) and _____ inches

4. 160 centimeters = _____ meter(s) and _____ centimeters

5. 277 centimeters = _____ meter(s) and _____ centimeters

Bonus: Brain Busters

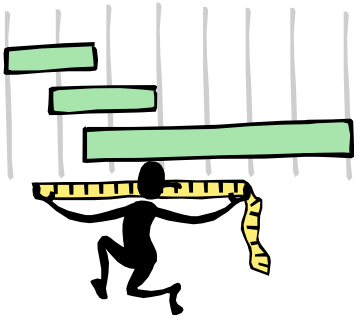
6. 68 inches = _____ feet and _____ inches

7. 89 inches = _____yard(s), _____foot/feet, and _____ inch(es)

Answer Key

Name: _____

Measurement Exchange



Helpful Hint:

12 inches= 1 foot
3 feet= 1 yard
100 Centimeters= 1 meter

1. 13 inches = **1 foot and 1 inch**
2. 26 inches = **2 feet and 2 inches**
3. 3 feet and 5 inches = **1 yard and 5 inches**
4. 160 centimeters = **1 meter and 60 centimeters**
5. 277 centimeters = **2 meters and 77 centimeters**

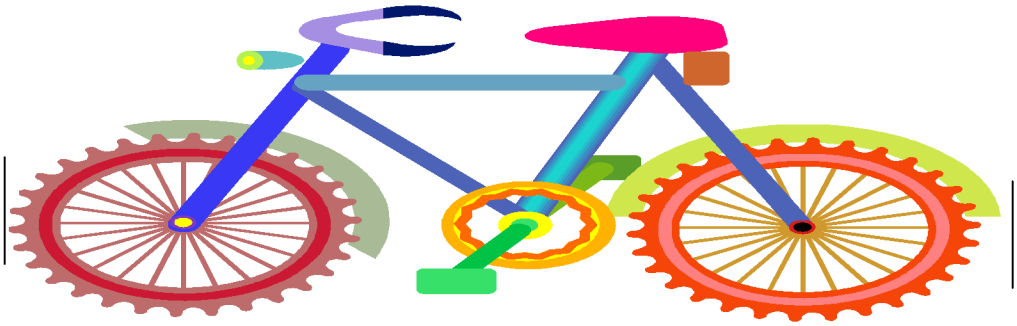
Bonus: Brain Busters

6. 68 inches = **5 feet and 8 inches**
7. 89 inches = **2 yards, 1 foot, and 5 inches**

Post-assessment

Name: _____

1. Use your inch ruler to measure the bike.



____inches

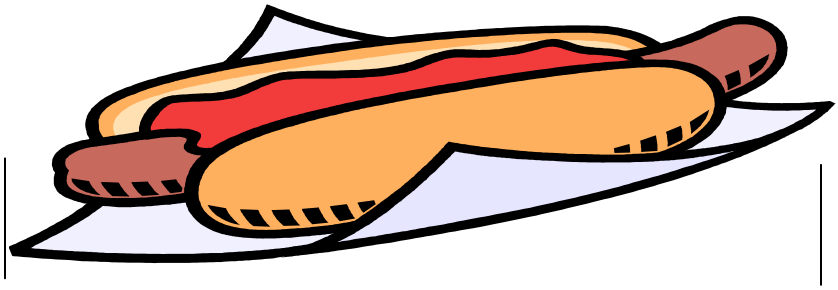
2. Use your inch ruler to measure the bear to the nearest inch.

___ inches

3. Use your inch ruler to measure the line to the nearest inch.

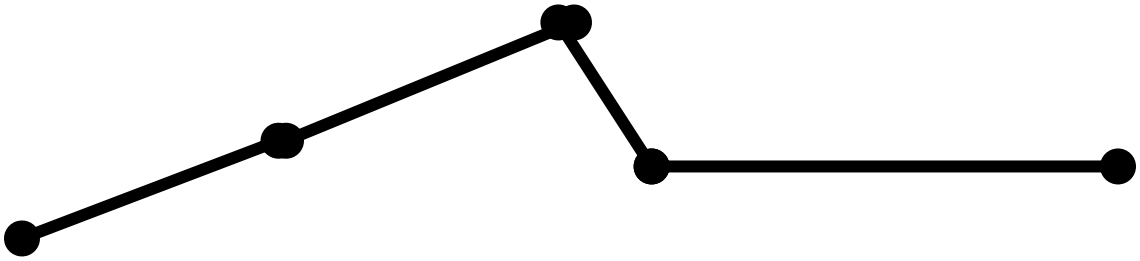
__inches

4. Use your centimeter ruler to measure the hot dog.



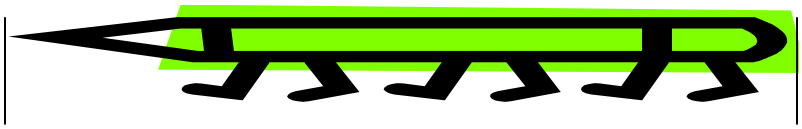
___ centimeters

5. Use your centimeter ruler to measure the path.



___ centimeters

6. Use your centimeter ruler to measure the pencil.



___ centimeters

Convert the following measurements.

7. 24inches= _____feet_____inches

8. 18 inches= _____foot_____inches

9. 125 centimeters= _____meter_____centimeters

10.

Step A

Jesse is 48 inches tall.

How tall is Jesse in feet?_____

How tall is Jesse in yards?_____

Step B

Explain how you found your answer. Use what you know about converting standard measurements in your explanation. Use words and/or numbers in your explanation.

_____

_____

_____

_____

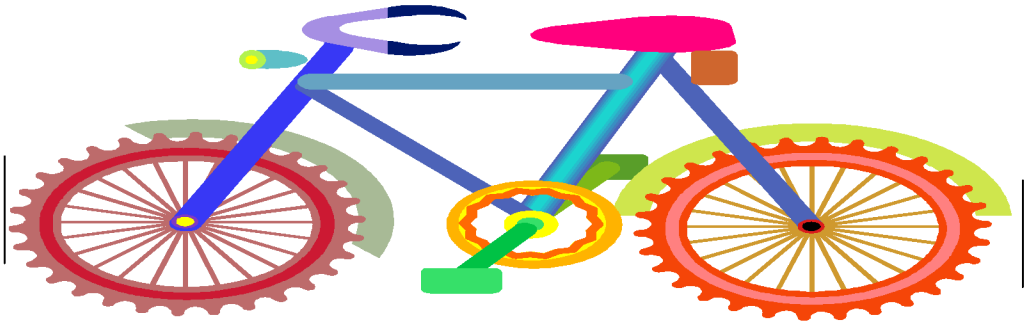
_____

Post-assessment

Answer Key

Name: _____

1. Use your inch ruler to measure the bike.



__**5**_inches

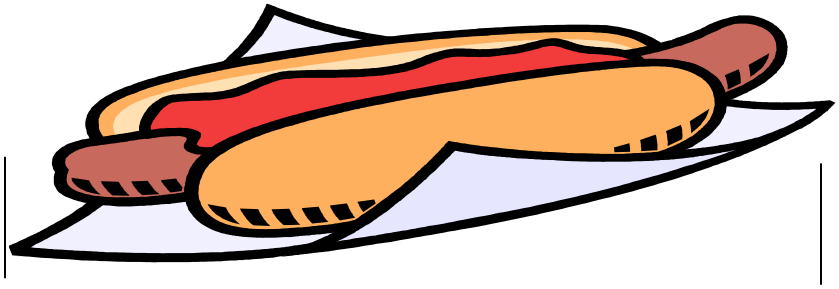
2. Use your inch ruler to measure the bear to the nearest inch.

2_ inches

3. Use your inch ruler to measure the line to the nearest inch.

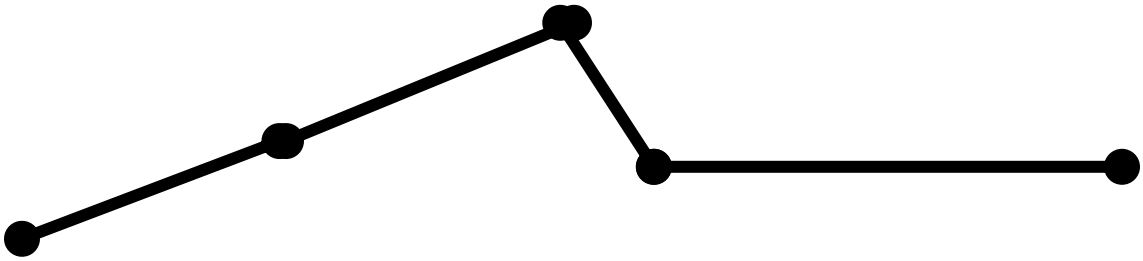
6_inches

4. Use your centimeter ruler to measure the hot dog.



11 centimeters

5. Use your centimeter ruler to measure the path.



16 centimeters

6. Use your centimeter ruler to measure the pencil.

_**10**_ centimeters

Convert the following measurements.

7. 24inches= 2 feet and 0 inches
8. 18 inches= 1 foot and 6 inches
9. 125 centimeters= 1 meter and 25 centimeters

10.

Step A

Jesse is 48 inches tall.

How tall is Jesse in feet?_____4 feet_____

How tall is Jesse in yards?_____1 yard 1 foot_____

Step B

Explain how you found your answer. Use what you know about converting standard measurements in your explanation. Use words and/or numbers in your explanation.

Optional Additional Resource

Pinch Cards
Standard v. Metric

Fold

Standard	**Standard**
Metric	**Metric**